



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,417	03/23/2004	R. Shane Fazio	10030899-1	3854
57299	7590	12/20/2007		
Kathy Manke Avago Technologies Limited 4380 Ziegler Road Fort Collins, CO 80525			EXAMINER LEWIS, MONICA	
			ART UNIT 2822	PAPER NUMBER
			NOTIFICATION DATE 12/20/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

avagoip@system.foundationip.com  
kathy.manke@avagotech.com  
scott.weitzel@avagotech.com

# Office Action Summary

Application No.

10/807,417

Applicant(s)

FAZZIO, R. SHANE

Examiner

Monica Lewis

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 24-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2822

### **DETAILED ACTION**

1. This office action is in response to the request for continued examination filed August 27, 2007.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/27/07 has been entered.

#### ***Response to Arguments***

3. Applicant's arguments with respect to claims 24-36 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2822

5. Claims 24, 26, 29, 32, 33 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Guenther et al. (U.S. Publication No. 2004/0211966).

In regards to claim 24, Guenther et al. ("Guenther") discloses the following:

a) an integrated circuit comprising a substrate (301) having an upper surface, a perimeter being disposed upon the upper surface and defining a hermetically sealed portion therewithin, at least one circuit element being disposed within the hermetically sealed portion (For Example: See Figure 3);

b) a hermetic cap (360) comprising a top member and a gasket (364), the cap being configured to cover the hermetically sealed portion and form a hermetically sealed cavity thereover, the gasket comprising opposing first inner and first outer vertical sidewalls depending downwardly from the cap, the sidewalls terminating in and being separated by a bottom edge (For Example: See Figure 3);

c) a bonding agent (375) disposed between and engaging the substrate and the bottom edge to form a hermetic seal between the cap and the substrate and thereby hermetically seal the cavity, the bonding agent further comprising opposing second inner and second outer sidewalls disposed between the substrate and the gasket, the second inner sidewall being located within the hermetically sealed portion, the second outer sidewall being located outside the hermetically sealed portion (For Example: See Figure 3); and

d) a caulking agent (380) disposed along and engaging at least portions of at least one of the second inner sidewall and the second outer sidewall, the caulking agent improving the hermeticity of the hermetic seal formed by the bonding agent (For Example: See Figure 3).

In regards to claim 26, Guenther discloses the following:

a) the caulking agent is disposed along substantially all of the second outer sidewall (For Example: See Figure 3).

In regards to claim 29, Guenther discloses the following:

a) the caulking agent is disposed along at least portions of the first outer sidewall (For Example: See Figure 3).

In regards to claim 32, Guenther discloses the following:

a) the bonding agent comprises gold (For Example: See Paragraph 22).

Art Unit: 2822

In regards to claim 33, Guenther discloses the following:

a) the caulking agent comprises at least one of an amorphous fluorocarbon polymer, a polyimide material, and a benzocyclobutene based material (For Example: See Paragraph 23).

In regards to claim 36, Guenther discloses the following:

a) the substrate comprises silicon (For Example: See Figure 11).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther et al. (U.S. Publication No. 2004/0211966) in view of Guenther et al. (U.S. Publication No. 2003/0062830).

In regards to claim 28, Guenther et al. ("Guenther") fails to disclose the following:

a) the caulking agent is disposed along at least portions of the first inner sidewall.

However, Guenther discloses a caulking agent (470) disposed along at least portions of the first inner sidewall (For Example: See Figure 4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include a caulking agent disposed along at least portions of the first inner sidewall as disclosed in Guenther because it aids in improving the flexibility of the device (For Example: See Paragraph 19).

Additionally, since Guenther and Guenther are both from the same field of endeavor, the purpose disclosed by Guenther would have been recognized in the pertinent art of Guenther.

8. Claims 25, 27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther et al. (U.S. Publication No. 2004/0211966) in view of Wang et al. (U.S. Patent No. 6,717,052).

In regards to claim 25, Guenther discloses the following:

a) second inner sidewall (For Example: See Figure 3).

In regards to claim 25, Guenther fails to disclose the following:

a) the caulking agent is disposed along substantially all of the inner sidewall.

However, Wang et al. ("Wang") discloses a semiconductor device that comprises the caulking agent is disposed along substantially all of the inner sidewall (For Example: See Figure 5C). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include a caulking agent that is disposed along substantially all of the inner sidewall as disclosed in Wang because it aids in providing protection for the device (For Example: See Abstract and Column 2 Lines 27-50).

Additionally, since Guenther and Wang are both from the same field of endeavor, the purpose disclosed by Wang would have been recognized in the pertinent art of Guenther.

In regards to claim 27, Guenther discloses the following:

a) second inner sidewall and second outer sidewall (For Example: See Figure 3).

In regards to claim 27, Guenther fails to disclose the following:

a) the caulking agent is disposed along substantially all of the inner sidewall and outer sidewall.

However, Wang discloses a semiconductor device that comprises the caulking agent is disposed along substantially all of the inner sidewall and outer sidewall (For Example: See Figure 5C). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include a caulking agent that is disposed along substantially all of the inner sidewall and outer sidewall as disclosed in Wang because it aids in providing protection for the device (For Example: See Abstract and Column 2 Lines 27-50).

Additionally, since Guenther and Wang are both from the same field of endeavor, the purpose disclosed by Wang would have been recognized in the pertinent art of Guenther.

In regards to claim 30, Guenther discloses the following:

- a) first inner sidewall and first outer sidewall (For Example: See Figure 3).

In regards to claim 30, Guenther fails to disclose the following:

- a) the caulking agent is disposed along at least portions of the inner sidewall and outer sidewall.

However, Wang discloses a semiconductor device that comprises a caulking agent that is disposed along at least portions of the inner sidewall and the outer sidewall (For Example: See Figure 5C). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include a caulking agent that is disposed along at least portions of the first inner sidewall and the first outer sidewall as disclosed in Wang because it aids in providing protection for the device (For Example: See Abstract and Column 2 Lines 27-50).

Additionally, since Guenther and Wang are both from the same field of endeavor, the purpose disclosed by Wang would have been recognized in the pertinent art of Guenther.

Art Unit: 2822

9. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther et al. (U.S. Publication No. 2004/0211966) in view of Goldmann et al. (U.S. Patent No. 6,459,160).

In regards to claim 31, Guenther fails to disclose the following:

a) comprises multiple layers of the caulking agent.

However, Goldmann et al. ("Goldmann") discloses a semiconductor device that comprises multiple layers of the caulking agent (142, 152 and 54) (For Example: See Figure 1b). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include multiple layers of the caulking agent as disclosed in Goldmann because it aids in providing protection for the device (For Example: See Column 7 Lines 30-34).

Additionally, since Guenther and Goldmann are both from the same field of endeavor, the purpose disclosed by Goldmann would have been recognized in the pertinent art of Guenther.

10. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther et al. (U.S. Publication No. 2004/0211966) in view of Applicant's Prior Art.

In regards to claim 34, Guenther fails to disclose the following:

a) a thickness of the gasket between the first inner sidewall and the first outer sidewall ranges between about 1 micron and about 10 microns.

However, Applicant's Prior Art ("APA") discloses a semiconductor device that a thickness of the gasket between the first inner sidewall and the first outer sidewall ranges between about 1 micron and about 10 microns (For Example: See Paragraph 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include a thickness of the gasket between the first inner



sidewall and the first outer sidewall ranges between about 1 micron and about 10 microns as disclosed in APA because it aids in sealing the device (For Example: See Paragraph 3).

Additionally, since Guenther and APA are both from the same field of endeavor, the purpose disclosed by APA would have been recognized in the pertinent art of Guenther.

11. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther et al. (U.S. Publication No. 2004/0211966) in view of Kikushima et al. (U.S. Publication No. 2003/0061693).

In regards to claim 35, Guenther fails to disclose the following:

a) the circuit element is a resonator.

However, Kikushima et al. ("Kikushima") discloses a semiconductor device that has a resonator (3) (For Example: See Figure 1b). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Guenther to include a resonator as disclosed in Kikushima because it aids in providing a communication device (For Example: See Paragraph 4).

Additionally, since Guenther and Kikushima are both from the same field of endeavor, the purpose disclosed by Kikushima would have been recognized in the pertinent art of Guenther.

Art Unit: 2822


***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular and after final communications.

ML

December 13, 2007



MONICA LEWIS  
PRIMARY PATENT EXAMINER